WORKPLACE SAFETY AND HEALTH IN MINNESOTA

From The
National Institute for Occupational Safety and Health

State Profile 2002

Delivering on the Nation's promise:
Safety and health at work for all people through prevention.

The National Institute for Occupational Safety and Health

NIOSH is the primary federal agency responsible for conducting research and making recommendations for the prevention of work-related illness and injury. NIOSH is located in the Department of Health and Human Services in the Centers for Disease Control and Prevention. The NIOSH mission is to provide national and world leadership to prevent work-related illness, injury, disability, and death by gathering information, conducting scientific research, and translating the knowledge gained into products and services. As part of its mission, NIOSH supports programs in every state to improve the health and safety of workers. NIOSH has developed this document to highlight recent NIOSH programs important to workers and employers in Minnesota.

The Burden of Occupational Illness and Injury in Minnesota

- In Minnesota, there are approximately 2.6 million individuals employed in the workforce.[1]
- In 2000, 68 workers died as a result of workplace injuries.[2]
- The agriculture, forestry, and fishing industry had the highest number of fatalities, followed by construction and manufacturing.[2]
- In 1999, the most recent year for which data are available, the rate of fatal workplace injuries was 2.7 deaths per 100,000 workers–below the national average rate of 4.5 deaths per 100,000 workers.[2]
- In 2000, there were 142,500 nonfatal workplace injuries and illnesses in Minnesota.[3]

The Cost of Occupational Injury and Illness in Minnesota

In 2000, the most recent year for which data are available, a total of $798.1 million was paid for workers' compensation claims by Minnesota private insurers, self-insured employers, and state funds.[4] This figure does not include compensation paid to workers employed by the federal government and also underestimates the total financial burden for private sector businesses, since only a fraction of health care costs and earnings lost through work injuries and illnesses is covered by workers' compensation. Chronic occupational illnesses like cancer are substantially under-reported in workers' compensation systems because work-relatedness is often difficult to establish.

How NIOSH Prevents Worker Injuries and Diseases in Minnesota

Health Hazard Evaluations (HHEs) and Technical Assistance

NIOSH evaluates workplace hazards and recommends solutions when requested by employers, workers, or state or federal agencies. Since 1993, NIOSH has responded to 48 requests for HHEs in Minnesota in a variety of industrial settings, including the following example:

Wyoming, Minnesota: Evaluation of Fumes from Plastic Injection-Molding
In 1999, NIOSH received a request by employees for an HHE at a facility in Wyoming, Minnesota, that primarily manufactures plastic corner guards and handles for mattresses, pallet legs, and diaper pales. There was concern that exposure to fumes from injection-molding at the facility was causing employees headaches, dizziness, sore throat, skin rashes, chronic ear problems, and shortness of breath. NIOSH investigators concluded that formaldehyde, acetaldehyde, hydrocarbon, and carbon monoxide levels in the facility were low. However, both formaldehyde and acetaldehyde are potentially carcinogenic and NIOSH recommends they be kept at the lowest feasible concentration. There also were low levels of many different volatile organic compounds in the injection-molding area, indicating that the process generates various compounds that should be kept at low concentration. Recommendations included better controlling the noise and heat generated by injection molding in the facility; placing employees' respirators, hearing protection, gloves, and arm sleeves into one area to facilitate their use; and keeping the exhaust fans running in the injection-molding area to help bring in fresh air.

Fatality Assessment and Control Evaluation (FACE) Investigations

NIOSH developed the FACE program to identify work situations with a high risk of fatality and to formulate and disseminate prevention strategies. In Minnesota, FACE is conducted by the Minnesota Department of Health, under a cooperative agreement with NIOSH. Since 1995, there have been 105 FACE investigations in Minnesota.

Minnesota: Farm Worker Suffocates In Truck Box
On August 25, 2000, a 19-year-old male farm worker died after he suffocated in grain in a truck box. The victim and a co-worker were using a grain auger to unload wheat from a truck into a storage bin. While the auger was still in operation, the victim entered the truck box and became completely submerged in the flowing wheat. After unsuccessful attempts to pull the victim from the box, his co-worker stopped the auger and called for help. The victim was transported to a local hospital where he was pronounced dead. The FACE investigators recommended that: workers never enter grain hauling equipment or storage structures that are being emptied; the box of grain hauling equipment be identified as a confined space and posted with hazard warning signs; and inexperienced workers be provided comprehensive safety training.

Building State Capacity

State-Based Surveillance
NIOSH funds the Adult Blood Lead Epidemiology and Surveillance Program (ABLES) in the Minnesota Department of Health. Through ABLES, the state's Health Department staff track and respond to cases of excessive lead exposure in adults which can cause a variety of adverse health outcomes such as kidney or nervous system damage and potential infertility.

University of Minnesota Education and Research Center (ERC)
The purpose of this ERC, one of 16 NIOSH ERCs nationwide, is to provide graduate academic and research training in occupational safety and health for industrial hygienists, physicians, nurses, and injury epidemiologists, and continuing education and outreach programs to professionals in the region. Currently,

the ERC also conducts a pilot research program for new investigators and an agriculture academic and outreach program for the agriculture community. In fiscal year 2000, a new program was funded to train occupational health services researchers. In fiscal year 2001, a program was funded to train injury prevention researchers. In the same year, there were 48 trainees and 19 graduates from all the funded programs; 79 continuing education courses were offered for 1,558 professionals.

Extramural Programs Funded by NIOSH

The following are examples of recent research contracts, research grants, training grants, or cooperative agreements funded by NIOSH in the state of Minnesota.

Adapting the North American Guidelines for Childhood Agricultural Tasks (NAGCAT)
With support from NIOSH, the University of Minnesota will help farm safety advocates adapt NAGCAT to the needs of farm families from ethnic minority communities in the U.S. Evaluation criteria will be developed by which the cultural appropriateness and the effectiveness of the existing NAGCAT guidelines can be measured, when used with a cultural minority group. Necessary changes will be made in order to make future guidelines appropriate for ethnic communities.

The Impact of Total Workload on Maternal Postpartum Health and Quality of Life
The effects of stress and role conflict from total workload on women's postpartum health and quality of life are not well understood. However, mothers of infants represent one of the fastest growing segments in the U.S. labor market. With support from NIOSH, researchers at the University of Minnesota will study the effects of total workload (i.e., hours of paid and unpaid work), use of family medical leave, job stress, and work-family conflict to maternal health at critical points in time after childbirth. The health and quality of life of approximately 800 women will be assessed at six weeks, three months, six months, 12 months, and 18 months after childbirth.

Effect of Mixed Exposures on Silicosis
The quantitative relationship between exposure to crystalline silica and development of silicosis is uncertain because exposure reconstructions are typically based on sparse data and dose reconstructions that obtain the cumulative lung burden of the worker do not account for simultaneous exposures to less toxic dusts, categorized as particles not otherwise classified (PNOC). The purpose of this study, funded by NIOSH at the University of Minnesota, is to address these issues and obtain the quantitative dose-response relationship between crystalline silica and silicosis. The study will utilize information from a large data set of human exposures to silica and PNOC and silicosis cases from 1935 to 1980.

Additional information regarding NIOSH services and activities can be accessed through the NIOSH home page at http://www.cdc.gov/niosh/homepage.html or by calling the NIOSH 800-number at 1-800-356-NIOSH (1-800-356-4674).

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[1]U.S. Department of Labor (DOL), Bureau of Labor Statistics (BLS), Local Area Unemployment Statistics, Current Population Survey, 2000.

[2]DOL, BLS in cooperation with state and federal agencies, Census of Fatal Occupational Injuries, 1999-2000.

[3]DOL, BLS in cooperation with participating state agencies, Survey of Occupational Injuries and Illnesses, 2000.

[4]National Academy of Social Insurance, *Workers' Compensation: Benefits, Coverage, and Costs, 2000 New Estimates,* May 2002.